

THE TREATMENT OF TUBERCULOUS ADENITIS BY ROENTGEN RAYS AND RADIUM.¹

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FORMERLY radiotherapy was used in the treatment of tuberculous adenitis to avoid deformity and unsightly scars; today this treatment is advised because more permanent cures are obtained than by any other method. At present surgeons of experience are not operating primarily for tuberculous adenitis. If they operate it is only to remove fibrous nodes after the tuberculous foci have been destroyed by roentgen rays or radium. Then a dissection of the cervical glands is always contra-indicated. Radiotherapy alone will cure over 90 per cent. of the cases.

Experience has proved that tuberculous adenitis is not primarily a surgical disease. The reason that it took years to prove that cervical adenitis was better treated by radiotherapy was really our fault in being too slow in reporting the cases, and a surgeon would see only a few cases, in the most of which the treatment was inefficient and incomplete. As before stated, in only a small percentage of cases, 5 to 10 per cent., is it advisable to remove fibrous nodules after radiation. If such nodules are removed and examined, little or no tuberculous material would be found, the fibrous stroma of the glands remaining.

In the treatment of tuberculous adenitis the first and most important consideration is that it is a local manifestation of a constitutional disease.

Most of the laryngologists are referring tuberculous adenitis for radiation as a routine procedure, and many will not remove diseased tonsils if the cervical glands are enlarged until the glands have been given a thorough course of treatment, either by roentgen rays or radium. Radiation of the enlarged cervical glands is important before removing the tonsils of children under fifteen years of age, and particularly so if under the age of five or six, as the lymphatic vessels are wide open, and in the removal of the tonsils before radiation there is danger of producing a general infection if tuberculosis is present.

In the past the treatment of tuberculous glands depended largely upon the physician first consulted. The treatment given has been the hygienic, medical, roentgen ray and radium and light therapy, vaccine and surgical. Tuberculin has given unsatisfactory results, and since radiation produces a systemic effect similar to successful

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tuberculin treatment and the results are more dependable, vaccines are seldom ever indicated, or at least not until we are able to obtain a more stable vaccine. The local application of iodine, ichthyol and other drugs is useless. Prophylactic treatment is important and should receive more attention. Until recently very little attention was paid to the source of infection. An effort should always be made to find the channels of infection, although it is often difficult to find the primary focus. The importance of removing unhealthy tonsils, bad teeth, etc., should not be overlooked.

The surgical treatment has not comprised any single method. Some would drain abscesses; others would inject antiseptics; others would excise the enlarged glands unless suppuration had occurred; others would do a complete dissection of the superficial glands. Some have hesitated to operate until Nature had partially walled off a sinus, while others disregarded that entirely. As a rule, nothing was done until suppuration had taken place.

Injudicious surgery has been very detrimental. Inefficient surgical treatment is followed by recurrence in the adjacent glands so frequently that when there is an operation performed it is looked upon as the beginning of a series of operations. The contraindications of treatment by surgery are: (1) Children get well without it; (2) we have no certain method of diagnosis in early cases; (3) all the affected glands cannot be removed; (4) scars; (5) recurrences. Since the disease can be removed more successfully by roentgen rays or radium, with no danger of spreading the disease without scarring and without sacrificing tissue, complete extirpation of the tuberculous glands should never be performed until the disease is well localized. Past experience and present results should make everyone advise radiotherapy, for at least the localized effect.

In many clinics more than a thousand cases have been treated by radiotherapy, and operation was required in less than 10 per cent. of the cases, even for the removal of fibrous nodules. Over 90 per cent. were cured by radiation alone.

Different authorities call attention to the fact that when the older methods are employed a certain percentage of the patients acquire pulmonary tuberculosis. This possibility never occurs when radiation is given before any lung involvement takes place. For this reason the medical treatment should not be persisted in too long without radiotherapy.

Large glands due to an inflammatory process are frequently secondary to a septic condition elsewhere and a search should be made for the primary lesion. When this is found and treated, if the glands remain large, and particularly if they show a tendency to suppurate, radiotherapy should be employed at once. If they are given treatment promptly and properly, suppuration can nearly always be avoided. I do not favor opening a tuberculous mass as soon as it begins to soften, as many advocate. Radiation given first

greatly facilitates repair of the parts and the sinus which frequently follows will not be so deep and will heal more readily. Certainly nothing is slower to heal than a sinus leading into a gland which has been opened just as suppuration was beginning. There is no better treatment than radiotherapy for carbuncles, boils or any other of the localized pus infections. Then why be in such haste to open a tuberculous abscess before it begins to bulge? Radiation of abscesses is never painful. This brings up the question—Do the rays produce an immunity both to tuberculosis and mixed infections?

I am sure that the susceptibility to the development of tuberculosis is always greatly lessened after a few radiations, and that the patient, at least in some cases, is rendered immune.

Recent investigations regarding tuberculosis and the various processes of tuberculous infection lead to the conclusion that tuberculosis has three stages: (1) The infection of the glands, usually coming in childhood; (2) the infection of the bones and joints; (3) the infection of the lungs.

There is no longer any doubt that the lymphatic glands form the first line of defence against tuberculosis. Nowhere is this so well demonstrated as when the glands of the neck are invaded, because almost invariably the virulence of the bacillus is greatly lessened after its entrance into the glands. In many cases the disease does not become general, so that many patients recover in a way that shows truly this infection is arrested. These tumors may spontaneously subside without suppuration, while in other patients the disease progresses until fluctuation shows that suppuration has taken place in the glands. Constitutional infection is not uncommon when tuberculous glands are neglected. Therefore a patient with chronic enlarged glands in the neck should have treatment before the constitutional symptoms develop. In the past this did not receive sufficient attention. We see too many cases coming too late where the glands have been enlarging a year or more. Such neglect often necessitates longer treatment and may even endanger the life of the patient.

Untreated tuberculosis of the glands is often followed by tuberculosis of the bones and joints, and finally there is an extension into the glands. In some individuals the process is checked in the bones or the joints. The process becomes very chronic, the resistance of the patient being sufficient to end the infection. Therefore it should be our aim to destroy the disease while it is a primary infection of the glands.

By raying the local infection in the glands its hypersusceptibility is reduced, which prevents the spreading of the disease. Tuberculin has been given for this purpose, but experience has shown that unless we are able to give the proper dosage, with the proper intervals, it may even increase the hypersusceptibility of the patient.

We must remember the responsibility of checking the disease in

the primary stage and treat the glands by radiotherapy as soon as discovered. It should be apparent to everyone that the removal by radical operation is contra-indicated, and when a recurrence takes place, not on account of the lack of surgical skill but because of the presence of the tubercle bacilli which are beyond the reach of the knife, the organism is rendered more susceptible, giving the disease a greater chance to spread than before the operation. The hypersusceptibility to tuberculosis is greatly increased by anything which tends to lower the vitality of the patient.

Tuberculous glands have been classified with regard to the pathologic involvement. Closed glands are found in two varieties, the hyperplastic and the fibrous. In the hyperplastic type the glandular substance increases, together with the stroma. If this variety is left untreated the glands soon liquefy and form an abscess known as soft glands. These may remain a long time, but if left untreated a tryptic ferment will digest the capsules, finally reaching the surface and producing unsightly scars. Fibrous glands occur in those who have a greater resistance, the tuberculous process is slower and the glandular material is not increased in the same ratio as the fibrous tissue. In the fibrous variety Nature is almost curing the patient. If the fibrous tissue does not entirely absorb it will frequently leave a hard nodule, the size of which is determined by the number of glands.

Cicatrized glands are enlarged glands in which the tuberculous process has been healed by the formation of scar tissue. If the glands have attained great size before radiotherapy has been employed a palpable nodule will usually be left. The patient may then think there is still a tuberculous process, and even the physician may not realize that a fibrous healing takes place in the cervical glands the same as it does in the lungs. Particular attention should be directed to this end, and the rays cannot be expected to absorb all the scar tissue which has been formed by the tuberculous process, when the glands have attained great size or when large amounts of fibrous tissue have been formed by Nature's cure before radiotherapy has been employed.

Then when operations are performed for such cicatrized glands radical procedures are never necessary and large, unsightly scars are avoided because the operation is performed for a different purpose. The healed nodules can be removed through a small incision and closed by sutures so that no deformity is left.

Open glands are those that have suppurated and opened to the surface. There are two varieties: those that break down as a result of tryptic ferment, the discharge of which is sterile, and those which break down, due to a mixed infection.

Recurrent glands, after a radical operation consisting mainly of mixed infections, are those recurrent immediately after the operation and those coming on slowly and some time after the operation, which

are usually of a purely tuberculous character. The increased hypersusceptibility of the patient after the operation is often a factor in the recurrence. Glandular enlargements on the opposite side of the neck or in any part of the body shows the increase of susceptibility after a radical operation. In these cases it is important to begin radiotherapy at once and not attempt a second operation, as has been the custom in the past.

It has been known for a long time that contagious diseases increase the hypersusceptibility to a marked degree. We have different grades of susceptibility in tuberculous adenitis. The small closed glands naturally represent the lowest grade of susceptibility, which is explained by the fact that the glands act as filters and contain the tubercle bacilli on their route to other organs.

As long as the glands do not suppurate they are usually checking the tubercle bacilli, although they are undergoing pathologic changes. When the glands have broken down they will not perform their full function as filters and the extension of tuberculosis is more likely. The result obtained by the treatment of tuberculous adenitis with radiotherapy leaves no doubt that this method is the treatment *par excellence* for this condition.

Radiologists are often called upon to treat other glandular enlargements (such as sarcoma, Hodgkin's disease, lymphatic leukemia) and the more rare tumors, such as yaws, glands and actinomycosis. A few years ago nearly all the glandular enlargements except carcinoma were considered a form of tuberculosis, but at present each has a characteristic picture when studied by the microscope, together with the clinical history. From a clinical standpoint Hodgkin's disease is closely analogous to lymphosarcoma, and in a large majority of cases they resemble each other in the manner in which they react to roentgen rays or radium. Both of these diseases have a malignant tendency to invade adjacent glands and to recur.

It is rather striking how all of these glandular tumors respond to radiotherapy. Either radium or roentgen rays is the best treatment we possess for all these glandular tumors except syphilis, for which we have a specific.

Radiotherapy in its development to date offers a number of problems, a solution of which means a great advancement in the treatment of diseases described as multiple glandular tumors. There is no other treatment which adds so much to the comfort of the patient and prolongs life to the same extent in lymphatic leukemia, Hodgkin's disease and lymphosarcoma.

Conclusions: 1. Radium and roentgen rays will cure more cases of tuberculous adenitis than any other method. Radiotherapy alone will cure over 90 per cent. of these cases.

2. Surgical treatment is always contra-indicated primarily in every case of tuberculous adenitis.

3. Those who still hold to radical operation will find the responsibility harder to shoulder with the ever-increasing recognition of the fact that tuberculous adenitis can be cured without it.

4. Hard, fibrous nodules following radiotherapy seldom ever contain any tuberculous foci, but it may be advisable to remove these nodules through a small incision the same as a foreign body.

5. It is to be remembered that large cervical glands may be due to sarcoma, Hodgkin's disease, leukemia, etc., and that radiotherapy is still the best form of treatment for multiple glandular tumors, but the end-results are not the same as when the enlargement is due to tuberculosis.

6. In the treatment of tuberculous adenitis in the future, when a more systematic raying is employed and when the cases are referred earlier, this method of treatment will be universally accepted.

SOME CONSIDERATIONS IN CONNECTION WITH GALL-BLADDER DISEASE.¹

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SOMEONE has styled the left border of the sternum in its cardiologic relationship as the romantic area. If one might apply this phrase to the abdomen, few would disagree that the right upper quadrant is deserving of the same characterization. It is quite true that many times the diagnostic story in the right hypochondrium is told in a very real manner, but all too often little respect is shown for the truth and much is left to the imagination.

In this comparatively small area, easily covered by the outstretched hand, are found the antral portion of the stomach with the pylorus, the duodenum, the biliary system, including the gall-bladder, the head of the pancreas, the right kidney, the ascending colon and the hepatic flexure, to say nothing of the appendix. This close anatomic relationship alone is sufficient to explain the problems in differential diagnosis encountered in this region. Besides this the more or less common nerve supply going to all of these structures, sympathetic and vagal in origin, increases the diagnostic troubles many times. A lesion in any one has its reference in one or all of the other organs. This alliance seems to be especially close between the gall-bladder and the stomach. The relationship of the intercostal nerve supply to the abdominal wall and the splanchnic innervation to the underlying viscera explains the upper right rectus rigidity when it spreads its protective cover over each one of these

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